



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

August 28, 2012

Kenneth L. Kimmell, Commissioner
Department of Environmental Protection
1 Winter Street Boston, MA 02108

Re: Approval of the Pathogen TMDL Addendum for the Cape Cod Watershed

Dear Commissioner Kimmell:

Thank you for your Department's submittal of *Addendum: Final Pathogen TMDL for the Cape Cod Watershed* (Control Number 252.5) on June 11, 2012. This Addendum TMDL was developed with the intention of adding 17 water body segments to the previously approved Final Pathogen TMDL for the Cape Cod Watershed (CN 252.0).

The U.S. Environmental Protection Agency (EPA) hereby approves Massachusetts's Cape Cod Pathogen Addendum TMDLs. EPA has determined that these TMDLs meet the requirements of §303(d) of the Clean Water Act (CWA), and of EPA's implementing regulations (40 CFR Part 130). Attached is a copy of our approval documentation.

We are very pleased with the quality of your TMDL submittal from the Division of Watershed Management, and commend your efforts to address bacteria-related impacts to the Cape Cod Watershed. My staff and I look forward to continued cooperation with the Massachusetts DEP in exercising our shared responsibility of implementing the requirements under Section 303(d) of the CWA.

Sincerely,

/s/

Stephen S. Perkins, Director
Office of Ecosystem Protection

Enclosure

cc:
Rick Dunn, MassDEP
Kim Groff, MassDEP
Art Johnson, MassDEP
Steve Silva, EPA
Andrea Traviglia, EPA

EPA NEW ENGLAND'S TMDL REVIEW

DATE: August 28, 2012

TMDL: Addendum: Final Pathogen TMDL for the Cape Cod Watershed

STATUS: Final

IMPAIRMENT/POLLUTANT: Pathogen TMDL Addendum for 17 Water Body Segments

BACKGROUND:

The Massachusetts Department of Environmental Protection (MassDEP) submitted a draft Addendum TMDL on January 27, 2012. A public comment period was held from April 11 to May 25, 2012. MassDEP submitted to EPA Region 1 the final *Addendum: Final Pathogen TMDL for the Cape Cod Watershed* (Control Number: CN 252.5) with a transmittal letter dated June 11, 2012. In addition to the Addendum TMDL itself, the submittal included, either directly or in reference, the following documents:

- Final Pathogen TMDL for the Cape Cod Watershed (CN 252.0)
- Proposed Massachusetts Year 2012 Integrated List of Waters
- Approval of the Final Pathogen TMDL for Cape Cod Watershed: Review Memo and Approval Letter (dated: Aug. 28, 2009)

The following review explains how the TMDL submission meets the statutory and regulatory requirements of TMDLs in accordance with § 303(d) of the Clean Water Act and EPA's implementing regulations in 40 CFR Part 130.

REVIEWERS: Andrea Traviglia (617-918-1993) e-mail: traviglia.andrea@epa.gov

REVIEW ELEMENTS OF TMDLs

Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations at 40 C.F.R. § 130 describe the statutory and regulatory requirements for approvable TMDLs. The following information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations, and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation.

Introduction

The *Final Pathogen TMDL for the Cape Cod Watershed* (CN: 252) was approved by EPA in 2009 (MassDEP 2009). The *Final Pathogen TMDL* (Final TMDL) was designed to support reduction of waterborne disease-causing organisms, known as pathogens, to reduce public health

risk. Waterborne pathogens enter surface waters from a variety of sources including sewage, the feces of warmblooded wildlife such as barn-yard animals, pets, geese, and gulls, illicit discharges of boat wastes and agricultural applications of manure. These pathogens can pose a risk to human health due to gastrointestinal illness through exposure via ingestion and contact with recreational waters, ingestion of drinking water, and consumption of filter-feeding shellfish. In the interim since the Cape Cod Pathogen TMDL was finalized in 2009, the 2004-2008 Cape Cod Surface Water Quality Assessment Report identified an additional 17 pathogen impaired estuary segments (see Attachment). This *Addendum: Pathogen TMDL for the Cape Cod Watershed* (CN: 252.5) was developed by MassDEP with the intention of adding these segments to the Final Pathogen TMDL for the Cape Cod Watershed, which was approved by EPA on August 28, 2009.

On March 12, 2012 these 17 segments were included in Category 5 of the Proposed Massachusetts Year 2012 Integrated List of Waters (Proposed 2012 Integrated List) pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. These newly listed impairments were also presented in Appendix 4 of the Proposed 2012 Integrated List as segments proposed for coverage under previously approved TMDLs (see Section 11 Public Participation of this document). As described in Section 11 below, MassDEP provided public notice for these Addendum TMDLs and received no comments.

This *Addendum: Pathogen TMDL for the Cape Cod Watershed* (Addendum TMDL) therefore presents information related to the newly listed segments only; all other Sections of the Final TMDL that were approved in 2009 are incorporated by reference and remain applicable to this Addendum TMDL.

1. Description of Waterbody, Pollutant of Concern, Pollutant Sources and Priority Ranking

The TMDL analytical document must identify the waterbody as it appears on the State/Tribe's 303(d) list, the pollutant of concern and the priority ranking of the waterbody. The TMDL submittal must include a description of the point and nonpoint sources of the pollutant of concern, including the magnitude and location of the sources. Where it is possible to separate natural background from nonpoint sources, a description of the natural background must be provided, including the magnitude and location of the source(s). Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation. The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as: (1) the assumed distribution of land use in the watershed; (2) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources; (3) present and future growth trends, if taken into consideration in preparing the TMDL; and, (4) explanation and analytical basis for expressing the TMDL through surrogate measures, if applicable. Surrogate measures are parameters such as percent fines and turbidity for sediment impairments, or chlorophyll a and phosphorus loadings for excess algae.

A. Description of Waterbody, Priority Ranking, and Background Information

A full description of the Cape Cod Watershed is presented in Section 2.0 of the Final TMDL (CN 252). The Addendum TMDL describes the 17 impaired segments identified after approval of the Final TMDL as not attaining designated uses (primarily contact recreation and shellfishing) due to exceeding Massachusetts' WQS for pathogens. Section 4.0 of the Addendum TMDL document details each waterbody's assessment unit identifier, segment name and

location, segment size, and classification, which determines the applicable water quality criteria. In addition, MassDEP prioritizes the segments and sources of pathogen impairment in need of mitigation measures (see Section 6.0 of the Addendum TMDL).

B. Pollutant of Concern

The bacteria impairment listings are based on monitoring data for various indicator organisms, depending on the resource type, and classification of the waterbody. There are no revisions to the pollutant of concern in the Addendum TMDL; the Cape Cod watershed pathogen TMDLs have been developed using fecal coliform as an indicator bacterium for shellfish areas and enterococci for bathing in marine waters (see Section 1.1 of the Final TMDL).

C. Pollutant Sources

There are no revisions made in the Addendum TMDL to the identification of potential sources of pathogens in the Cape Cod Watershed (Section 5.0 of the Final TMDL). Actual sources of bacterial pollution are identified where known; as set forth in Sections 4 and 6; the Addendum TMDL document articulates both general categories and specific sources of pathogen contributions from the range of possible pathogen source categories. Specific sources identified include storm water run-off, leaking sewer pipes, failing septic systems, wildlife including birds, recreational activities, illicit boat discharges, sanitary sewer overflows and wastewater treatment plants.

Assessment:

EPA Region 1 concludes that the Addendum TMDL document, combined with Sections 2.0 and 5.0 from the Final TMDL document (as referenced in the Addendum TMDL), meet the requirements for describing the TMDL waterbody segments, pollutants of concern, identifying and characterizing sources of impairment, and priority ranking. Please see the Final TMDL and EPA's Final Pathogen TMDL Approval documents (dated: Aug. 28, 2009) for additional details.

2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribe water quality standard, including the designated use(s) of the waterbody, the applicable numeric or narrative water quality criterion, and the antidegradation policy. Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation. A numeric water quality target for the TMDL (a quantitative value used to measure whether or not the applicable water quality standard is attained) must be identified. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, usually site specific, must be developed from a narrative criterion and a description of the process used to derive the target must be included in the submittal.

There have been no revisions to the water quality standards that apply to these impairments since the Cape Cod Pathogen TMDL was finalized in 2009 (see Section 3.0 of the Final Cape Cod Pathogen TMDL).

Section 4.0 of the Addendum TMDL document describes each of the newly listed 17 impaired water segments of the Cape Cod Watershed -- including the water body's designated use,

summary of data, sources of pathogens when available and other characteristics. This section also indicates the water quality classification (A, B, SA or SB) for each segment. The water quality criteria applicable to the A, B, SA and SB segments of the Cape Cod watershed are included in the Addendum TMDL in Table 7-1.

The EPA-approved numeric water quality criteria for each segment are the targets upon which both the daily concentration and TMDL targets of the Addendum TMDL are based.

Assessment:

EPA concludes that MassDEP has properly described and interpreted the applicable water quality standards to set the TMDL targets as indicated in Section 7.0 of the Addendum TMDL document and Section 3.0 of the Final TMDL document. Please see the Final TMDL and EPA's Final Pathogen TMDL Approval documents (dated: Aug. 28, 2009) for additional details.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

As described in EPA guidance, a TMDL identifies the loading capacity of a waterbody for a particular pollutant. EPA regulations define loading capacity as the greatest amount of loading that a water can receive without violating water quality standards (40 C.F.R. § 130.2(f)). The loadings are required to be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. § 130.2(i)). The TMDL submittal must identify the waterbody's loading capacity for the applicable pollutant and describe the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In most instances, this method will be a water quality model. Supporting documentation for the TMDL analysis must also be contained in the submittal, including the basis for assumptions, strengths and weaknesses in the analytical process, results from water quality modeling, etc. Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation.

In many circumstances, a critical condition must be described and related to physical conditions in the waterbody as part of the analysis of loading capacity (40 C.F.R. § 130.7(c)(1)). The critical condition can be thought of as the "worst case" scenario of environmental conditions in the waterbody in which the loading expressed in the TMDL for the pollutant of concern will continue to meet water quality standards. Critical conditions are the combination of environmental factors (e.g., flow, temperature, etc.) that results in attaining and maintaining the water quality criterion and has an acceptably low frequency of occurrence. Critical conditions are important because they describe the factors that combine to cause a violation of water quality standards and will help in identifying the actions that may have to be undertaken to meet water quality standards.

For this Addendum TMDL, as was done in the Final TMDL (CN252), MassDEP developed two types of TMDL targets. First, MassDEP set daily concentration TMDL (WLA/LA) targets for each one of the discharge sources by category (i.e., NPDES discharges, storm water, CSO, etc). MassDEP recommends that the concentration targets be used as the primary guide for implementation. Second, maximum daily loads were developed as a function of watershed size and run-off volume. For these 17 embayment segments, as in the Final TMDL, total maximum daily loads were calculated as a function of the observed long-term precipitation on Cape Cod, the estimated average run-off from each embayment and the most stringent water quality criteria based on segment classification (Section 7 of the Final TMDL, Section 7 of the Addendum TMDL).

MassDEP chose to express the loading capacities in terms of concentrations (Table 7-1 Addendum) set equal to or less than the WQS for several reasons. First, as stated in the TMDL, “MassDEP believes that expressing a loading capacity for bacteria in terms of concentrations set equal to the Commonwealth’s adopted criteria provides the clearest and most understandable expression of water quality goals to the public and to groups that conduct water quality monitoring.” In addition, specific water body segment data are provided that indicate the range in magnitude of the pathogen concentrations for each impaired segment. Based on the data available, MassDEP prioritized the segments in need of remediation (See Section 6.0 of the Addendum TMDL; specifically Table 6-1). In the Cape Cod watershed, storm water run-off, illicit connections, leaking sewer pipes, sanitary sewer overflows in sewer areas and failing septic systems are a significant cause of pathogen criteria water quality impairment.

Assessment:

There is nothing in EPA’s regulations that forbids expression of a TMDL in terms of multiple TMDL targets. TMDLs can be expressed in various ways, including in terms of toxicity, which is a characteristic of one or more pollutants, or by some “other appropriate measure.” 40 C.F.R. § 130.2(i). The target loading capacities expressed in the TMDL document are set at levels which assure WQS will be met (criteria at point of discharge and loading based on meeting ambient water quality criteria). The concentration loading capacity is based on the concentration criteria for each water body. If all sources of pathogens are below the water quality criteria then it follows that the receiving water will meet the WQS for bacteria.

Both formats (concentration and load) express targets designed to attain the designated use of each waterbody segment based on a straight forward derivation of TMDL targets from the water quality criteria adopted by the Commonwealth. Both formats will achieve water quality criteria for both dry and wet weather and for all storm events whenever they occur (e.g. on any given day), whenever the bacteria criteria are in effect. These approaches have been used by states for TMDL development and approved by EPA in the past.

The total daily maximum loads were calculated by multiplying the concentration criterion by storm water run-off to calculate a daily mass loading. The loading capacity expressed in this way is mathematically derived to assure that the sum of the loads to the receiving water from either the stream flow and/or storm water will result in a concentration at the water quality standard.

In sum, the above loading capacity targets are directly linked to the Commonwealth’s WQS’ pathogen criteria to achieve the designated use of the water bodies covered by this TMDL.

4. Load Allocations (LAs)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity allocated to existing and future nonpoint sources and to natural background (40 C.F.R. § 130.2(g)). Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. § 130.2(g)). Where it is possible to separate natural background from nonpoint sources, load allocations should be described separately for background and for nonpoint sources.

If the TMDL concludes that there are no nonpoint sources and/or natural background, or the TMDL recommends a

zero load allocation, the LA must be expressed as zero. If the TMDL recommends a zero LA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero LA implies an allocation only to point sources will result in attainment of the applicable water quality standard, and all nonpoint and background sources will be removed.

There are no revisions in the determination of the LAs in this TMDL Addendum from the Final TMDL. The target load allocations for non-NPDES regulated point sources, non-point sources and background are set in the same manner as in the Final TMDL (CN252); equal to either the applicable water quality standard of the receiving water or to zero if the origin of the source is prohibited (e.g., failing septic systems) (see Section 7.0 and Table 7-1 in the Addendum TMDL).

As was done in the Final TMDL, the storm water load allocation for each stream segment throughout the Cape Cod watershed is zero since the runoff from pervious areas is negligible due to the highly pervious soils on Cape Cod. However, as discussed in the next section on wasteload allocations, storm water mass (colonies/day) allocations were developed for embayments and are included in the wasteload allocation.

Assessment:

EPA Region 1 approved the approach utilized in the Final TMDL (see Approval documents dated Aug. 28, 2009) and MassDEP has not made revisions to the LA determinations. EPA concludes that load allocations are adequately specified in the Addendum TMDL at levels necessary to attain and maintain WQS.

5. Wasteload Allocations (WLAs)

EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to existing and future point sources (40 C.F.R. § 130.2(h)). If no point sources are present or if the TMDL recommends a zero WLA for point sources, the WLA must be expressed as zero. If the TMDL recommends a zero WLA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero WLA implies an allocation only to nonpoint sources and background will result in attainment of the applicable water quality standard, and all point sources will be removed.

In preparing the wasteload allocations, it is not necessary that each individual point source be assigned a portion of the allocation of pollutant loading capacity. When the source is a minor discharger of the pollutant of concern or if the source is contained within an aggregated general permit, an aggregated WLA can be assigned to the group of facilities. But it is necessary to allocate the loading capacity among individual point sources as necessary to meet the water quality standard.

The TMDL submittal should also discuss whether a point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur. In such cases, the State/Tribe will need to demonstrate reasonable assurance that the nonpoint source reductions will occur within a reasonable time.

There are no revisions in the determination of the WLAs in this TMDL Addendum from the original Cape Cod Pathogen TMDL (Final Cape Cod Pathogen TMDL report Section 7.0). MassDEP established concentration-based WLAs by applying the numeric criteria directly to each discharge. MassDEP has established WLA/LA targets for concentration (colonies/100ml) by discharge source category (Table 7-1 Addendum), applicable to each individual source (wastewater treatment plants, CSO, storm water, etc). Individual mass loading targets were also

established for all regulated continuous sources (i.e. non-storm water related) as the product of each discharger's daily flow and the concentration target.

Assessment:

EPA Region 1 approved the approach utilized in the Final TMDL (see Approval documents dated Aug. 28, 2009) and MassDEP has not made revisions to the WLA determinations. EPA concludes that wasteload allocations are adequately specified in the Addendum TMDL at levels necessary to attain and maintain WQS.

6. Margin of Safety (MOS)

The statute and regulations require that a TMDL include a margin of safety to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA § 303(d)(1)(C), 40 C.F.R. § 130.7(c)(1)). EPA guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.

There are no revisions made in the TMDL Addendum as to how the margin of safety is calculated in the Cape Cod Pathogen TMDL (Section 7.5, Final TMDL report). The TMDL provides for an implicit margin of safety. The TMDL sets the target loading capacity, load allocations, and wasteload allocations equal to either the applicable water quality standard of the receiving water, or zero if the sources are prohibited. Therefore, there is a high level of confidence that the TMDL is established at levels that are consistent with the WQS. In addition, in establishing the concentration WLAs and LAs, the approach used by MassDEP does not rely on in-stream processes such as bacteria die-off and settling which are known to reduce in-stream bacteria concentrations.

Assessment:

EPA Region 1 approved the approach utilized in the Final TMDL (see Approval documents dated Aug. 28, 2009) and MassDEP has not made revisions to the MOS determinations. EPA concludes that the approach used in developing the TMDL provides for an adequate implicit MOS.

7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The method chosen for including seasonal variations in the TMDL must be described (CWA § 303(d)(1)(C), 40 C.F.R. § 130.7(c)(1)).

There are no revisions made in the TMDL Addendum with respect to seasonal variation from the Cape Cod Pathogen TMDL (Section 7.6, Final Cape Cod Pathogen TMDL report). The TMDL applies throughout the year when seasonal pathogen WQS apply. The WQS criteria may be applied on a seasonal basis at the discretion of the MassDEP (see 314 CMR 4.05(3)(a)4 and 4.05(3)(b)4.).

Assessment:

EPA Region 1 approved the approach utilized in the Final TMDL (see Approval documents dated Aug. 28, 2009) and MassDEP has not made revisions to accounting for seasonal variability. EPA concludes that the TMDL documents have adequately addressed seasonal variability.

8. Monitoring Plan

EPA's 1991 document, Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001), and EPA's 2006 guidance, Clarification Regarding "Phased" Total Maximum Daily Loads, recommend a monitoring plan when a TMDL is developed using the phased approach. The guidance indicates that a State may use the phased approach for situations where TMDLs need to be developed despite significant data uncertainty and where the State expects that the loading capacity and allocation scheme will be revised in the near future. EPA's guidance provides that a TMDL developed under the phased approach should include, in addition to the other TMDL elements, a monitoring plan that describes the additional data to be collected, and a scheduled timeframe for revision of the TMDL.

There are no revisions made in the Addendum with respect to the monitoring plan in the Cape Cod Pathogen TMDL (Final Cape Cod Pathogen TMDL report Section 9.0).

Assessment:

EPA concludes that the anticipated monitoring by and in cooperation with MassDEP is sufficient to evaluate the adequacy of progress toward attainment of WQS, although not a required element of EPA's TMDL approval process as this TMDL is not a phased TMDL.

9. Implementation Plans

On August 8, 1997, Bob Perciasepe (EPA Assistant Administrator for the Office of Water) issued a memorandum, "New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs)," that directs Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired solely or primarily by nonpoint sources. To this end, the memorandum asks that Regions assist States/Tribes in developing implementation plans that include reasonable assurances that the nonpoint source load allocations established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. The memorandum also includes a discussion of renewed focus on the public participation process and recognition of other relevant watershed management processes used in the TMDL process. Although implementation plans are not approved by EPA, they help establish the basis for EPA's approval of TMDLs.

There are no revisions made in the Addendum with respect to the implementation plan section in the Cape Cod Pathogen TMDL (Final Cape Cod Pathogen TMDL report Section 8.0).

Assessment:

In the Final TMDL, MassDEP has included an outline of implementation plans, priorities and authorities, although not a required element of the TMDL approval. EPA is taking no action on the implementation plan.

10. Reasonable Assurances

EPA guidance calls for reasonable assurances when TMDLs are developed for waters impaired by both point and nonpoint sources. In a water impaired by both point and nonpoint sources, where a point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur, reasonable assurance that the nonpoint source reductions will happen must be explained in order for the TMDL to be approvable. This information is necessary for EPA to determine that the load and wasteload allocations will achieve water quality standards.

In a water impaired solely by nonpoint sources, reasonable assurances that load reductions will be achieved are not required in order for a TMDL to be approvable. However, for such nonpoint source-only waters, States/Tribes are strongly encouraged to provide reasonable assurances regarding achievement of load allocations in the implementation plans described in section 9, above. As described in the August 8, 1997 Perciasepe memorandum, such reasonable assurances should be included in State/Tribe implementation plans and “may be non-regulatory, regulatory, or incentive-based, consistent with applicable laws and programs.”

There are no revisions made in the Addendum with respect to the reasonable assurance section in the Cape Cod Pathogen TMDL (Final Cape Cod Pathogen TMDL report Section 10.0).

Assessment:

EPA Region 1 approved the reasonable assurance approach utilized in the Final TMDL (see Approval documents dated Aug. 28, 2009) and MassDEP has not made revisions to that section in the Addendum TMDL. Although not required because MassDEP did not increase WLAs based on expected LA reductions, MassDEP has provided reasonable assurance that WQS will be met.

11. Public Participation

EPA policy is that there must be full and meaningful public participation in the TMDL development process. Each State/Tribe must, therefore, provide for public participation consistent with its own continuing planning process and public participation requirements (40 C.F.R. § 130.7(c)(1)(ii)). In guidance, EPA has explained that final TMDLs submitted to EPA for review and approval must describe the State/Tribe’s public participation process, including a summary of significant comments and the State/Tribe’s responses to those comments. When EPA establishes a TMDL, EPA regulations require EPA to publish a notice seeking public comment (40 C.F.R. § 130.7(d)(2)).

Inadequate public participation could be a basis for disapproving a TMDL; however, where EPA determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.

During the Final TMDL process, MassDEP publically announced the draft Final TMDL on July 23, 2005 and copies were distributed to key stakeholders. MassDEP also posted the draft Final TMDL on its website for public review on the same date. A public informational meeting was also held to review the findings of the draft Final TMDL report and to solicit public comment.

MassDEP publically announced the Proposed 2012 Integrated List on March 12, 2012 and copies were distributed to key stakeholders. The public comment period allowed for over 30 days and ended on April 30, 2012. MassDEP did not receive any comments related to the inclusion of these 17 segments on the 2012 Proposed List.

The public process for approval of the newly listed segments covered by this Addendum TMDL included publication of Notice of Availability in the Environmental Monitor on April 11, 2012 along with an email announcing the public comment period to a targeted list of organizations, stakeholders and key contacts. The public notice allowed for over 30 days for public comment and closed on May 25th 2012. MassDEP did not receive any public comments during this timeframe.

Assessment:

EPA concludes that MassDEP has done a sufficient job of involving the public in the development of the Addendum TMDL, provided adequate opportunities for the public to comment and as no comments were received, MassDEP did not need to prepare a response to comments.

12. Submittal Letter

A submittal letter should be included with the TMDL analytical document, and should specify whether the TMDL is being submitted for a technical review or is a final submittal. Each final TMDL submitted to EPA must be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final submittal, should contain such information as the name and location of the waterbody, the pollutant(s) of concern, and the priority ranking of the waterbody.

Assessment:

On June 11, 2012, MassDEP submitted the Addendum: Final Pathogen TMDL for the Cape Cod Watershed (Control Number: CN 252.5). The documents contained all of the elements necessary to approve the TMDL.

Attachment 1: Cape Cod Pathogen Impaired Segments

Segment ID	Segment Name	Size (Sq. mi.)	New Impairment Cause	Segment Description
MA96-79	Cockle Cove Creek, SA	0.007	Fecal Coliform, Enterococci	Northeast of the bend in Cockle Drive, Chatham to confluence with Bucks Creek, Chatham
MA96-86	Dock Creek, SA	0.02	Fecal Coliform	From railroad crossing northeast of Route 6A, Sandwich to confluence with Old Harbor Creek, Sandwich.
MA96-83	East Harbor (Pilgrim Lake), SA	0.50	Fecal Coliform	Truro
MA96-93	Halls Creek, SA	0.07	Fecal Coliform	Estuarine portion, from Craigville Beach Road, Barnstable to mouth at Centerville Harbor, Barnstable.
MA96-82	Hyannis Inner Harbor, SA	0.13	Fecal Coliform	Waters landward of an imaginary line drawn from Harbor Bluff, Barnstable to Hyannis Park, Yarmouth.
MA96-78	Little Pleasant Bay, SA, ORW	3.3	Fecal Coliform	Waters north and east of imaginary lines drawn from the northeasterly edge of Orleans (near The Horseshoe), southeasterly to the northeastern tip of Sipson Island, then continuing to and around the northeastern border of Sipson Meadow, Orleans then south to the northern tip of Strong Island, Chatham then east to a point on the inner Cape Cod National Seashore.
MA96-76	The River, SA/ORW	0.42	Fecal Coliform	The water landward of an imaginary line drawn between Old Field Point and Namequoit Point including Meetinghouse Pond, and Kescayo Gansett Pond locally known as "Lonnie's Pond".
MA96-92	Santuit River, SA	0.008	Fecal Coliform	From confluence with fresh water portion south of Old Mill Road, Mashpee to mouth at Shoestring Bay, Mashpee/Barnstable.
MA96-81	Snows Creek, SA	0.02	Fecal Coliform	East of Old Colony Road, Barnstable to mouth at Lewis Bay, Barnstable.
MA96-87	Springhill Creek, SA	0.01	Fecal Coliform	From railroad crossing northeast of Route 6A, Sandwich to confluence with Old Harbor Creek, Sandwich.
MA96-94	Stewarts Creek, SA	0.01	Fecal Coliform	Estuarine portion, west of Stetson Street, Barnstable to mouth at Hyannis Harbor, Barnstable.
MA96-56	Little Pond, SA	0.07	Fecal Coliform	West of Vista Boulevard, Falmouth outlet to Vineyard Sound, Falmouth.
MA96-80	Mill Creek, SA	0.07	Fecal Coliform	Headwaters, outlet Mill Pond, Yarmouth to confluence with Lewis Bay, Yarmouth.
MA96-85	Mill Creek, SA	0.02	Fecal Coliform	Headwaters, outlet Shawme Lake Lower, Sandwich to confluence with Old Harbor Creek, Sandwich.
MA96-84	Old Harbor Creek, SA	0.06	Fecal Coliform	From Foster Road, Sandwich to Sandwich Harbor, Sandwich.
MA96-72	Paw Wah Pond, SA < ORW	0.008	Fecal Coliform	Orleans
MA96-73	Pochet Neck, SA, ORW	0.24	Fecal Coliform	to confluence with Little Pleasant Bay, Orleans.

Data for entry in EPA's National TMDL Tracking System								
TMDL Name		Cape Cod Watershed (17 segments)						
Number of TMDLs*		18						
Type of TMDLs*		Bacteria^						
Number of listed causes (from 303(d) list)		0						
Lead State		Massachusetts (MA)						
Individual TMDLs listed below								
TMDL name	Segment	TMDL Segment ID #	TMDL Pollutant ID# & name	TMDL Impairment Cause(s)	Pollutant endpoint (Class: geometric mean;10% or SSM*)	Unlisted?	NPDES Point Source & ID#	Listed for anything else?
Cockle Cove Creek, SA		MA96-79	259 (Fecal coliform bacteria) 605 (Enterococcus Bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml SA: 35 col/100 ml; 104 col/100 ml	Yes	NPDES MS4 General Stormwater permit MAR041101	-
Dock Creek, SA		MA96-86	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES permit MA0110027, NPDES MS4 General Stormwater permit MAR041155	-
East Harbor (Pilgrim Lake), SA		MA96-83	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	-	-
Halls Creek,SA		MA96-93	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041090	-
Hyannis Inner Harbor, SA		MA96-82	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permits MAR041090 and MAR041176	Nitrogen (total)
Little Pleasant Bay, SA, ORW		MA96-78	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041146	Nitrogen (total)
The River, SA/ORW		MA96-76	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041146	
Santuit River, SA		MA96-92	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041090 and MAR041129	-
Snows Creek, SA		MA96-81	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041090	-
Springhill Creek, SA		MA96-87	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041155	-
Stewarts Creek, SA		MA96-94	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041090	-
Little Pond, SA		MA96-56	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR04114	

Mill Creek, SA	MA96-80	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041176	Nitrogen (total)
Mill Creek, SA	MA96-85	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041155	-
Old Harbor Creek, SA	MA96-84	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041155	-
Paw Wah Pond, SA< ORW	MA96-72	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	-	
Pochet Neck, SA, ORW	MA96-73	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041146	
Cockle Cove Creek, SA	MA96-79	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES MS4 General Stormwater permit MAR041101	-
Dock Creek, SA	MA96-86	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	NPDES permit MA0110027, NPDES MS4 General Stormwater permit MAR041155	-
East Harbor (Pilgrim Lake), SA	MA96-83	259 (Fecal coliform bacteria)	Pathogens (41)	SA: 14 fc /100 ml; 28 fc /100 ml	Yes	-	-
TMDL Type		Point & Nonpoint Sources					
Establishment Date (approval)*		Aug 28, 2012					
EPA Developed		No					
Towns affected*		Barnstable, Chatham, Falmouth, Hyannis, Mashpee, Orleans, Sandwich, Truro, Yarmouth, MA					

[†]Class = Water Body Classification: 10% = no more than 10% of the samples shall exceed statistic; SSM = Single Sample Maximum